

WHAT IS CLAIMED IS:

1. An antenna on a printed circuit board (PCB) with a compensating capacitor, the antenna comprising:

5        a radiator disposed over a first surface of the PCB, wherein the radiator includes a short circuit stub section, a signal feeding section , and a tuning section coupled together at a joint, wherein the tuning section   includes a bending portion;

10      a signal feeding line, disposed on the first surface of the PCB and electrically coupled to the radiator at the signal feeding section of the radiator; and

15      a ground layer, disposed on a second surface of the PCB, one terminal of the short circuit stub section being electrically coupled to the ground layer,

wherein the bending portion of the tuning section is overlapping with the ground layer to form the compensating capacitor.

2. The antenna of claim 1, wherein the ground layer includes a protruding portion from an edge, wherein the protruding portion is at least overlapping with the bending portion of the tuning section to form the compensating capacitor.

3. The antenna of claim 2, wherein the bending portion of the tuning section extends into the ground layer, crossing over the protruding portion.

4. The antenna of claim 1, wherein the bending portion of the tuning section extends crossing over an edge of the ground layer.

20      5. An antenna on a printed circuit board (PCB) with a compensating capacitor, the antenna comprising:

      a radiator disposed over a first surface of the PCB, wherein the radiator includes a signal feeding section and a tuning section coupled together at a joint, wherein the tuning section   includes a bending portion;

a signal feeding line on the first surface of the PCB, electrically coupled to the radiator at the signal feeding section of the radiator; and

a ground layer, disposed on a second surface of the PCB,

wherein the bending portion of the tuning section is overlapping with the ground

5 layer to form the compensating capacitor.

6. The antenna of claim 5, wherein the ground layer includes a protruding portion from an edge, wherein the protruding portion is at least overlapping with the bending portion of the tuning section to form the compensating capacitor.

7. The antenna of claim 6, wherein the bending portion of the tuning section

10 extends into the ground layer, crossing over the protruding portion.

8. The antenna of claim 5, wherein the bending portion of the tuning section extends crossing over an edge of the ground layer.

9. A method for forming an antenna on a printed circuit board (PCB), the method comprising:

15 forming a radiator over a first surface of the PCB, wherein the radiator at least includes a signal feeding section and a tuning section coupled at a joint;

forming a signal feeding line on the PCB, wherein the signal feeding line is electrically coupled to the radiator at the signal feeding section; and

forming a ground layer over a second surface of the PCB,

20 wherein a portion of the tuning section is arranged to have overlapping with a portion of the ground layer to form a compensating capacitor.

10. The method of claim 9, wherein the radiator is further formed with a short circuit stub section, wherein one terminal of the short circuit stub section is electrically coupled to the ground layer short circuit stub section.

11. The method of claim 10, wherein in the step of forming the ground layer, the ground layer is formed to include a protruding portion from an edge, wherein the protruding portion is at least overlapping with the portion of the tuning section to form the compensating capacitor.
- 5        12. The method of claim 11, wherein the portion of the tuning section is formed to extend into the ground layer, crossing over the protruding portion.
13. The method of claim 10, wherein the portion of the tuning section has a bending portion which extends crossing over an edge of the ground layer.
- 10        14. The method of claim 9, wherein in the step of forming the ground layer, the ground layer is formed to include a protruding portion from an edge, wherein the protruding portion is at least overlapping with the portion of the tuning section to form the compensating capacitor.
- 15        15. The method of claim 14, wherein the portion of the tuning section is formed to extend into the ground layer, crossing over the protruding portion.
16. The method of claim 9, wherein the portion of the tuning section has a bending portion which extends crossing over an edge of the ground layer.